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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,916	12/08/2003	Minehiro Tonosaki	246219US6	9663
22850	7590	10/19/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MCKINNON, TERRELL L	
			ART UNIT	PAPER NUMBER
			3753	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,916

Applicant(s)

TONOSAKI ET AL.

Examiner

Terrell L. Mckinnon

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment

Receipt is acknowledged of applicant's amendment filed August 2, 2005. Claims 11-35 are pending and an action on the merits is as follows.

Applicant's arguments with respect to claims 11-35 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newton et al. (U.S. 6,437,981) in view of Antoniadis et al. (U.S. 5,948,552).

Newton discloses a thermally enhanced microcircuit package and method of forming comprising:

- a refrigerant, an evaporator formed between a glass and a substrate;
- a condenser formed between a glass and a substrate (column 6, lines 40-45);
- a liquid passage linking the evaporator and condenser configured to allow the refrigerant to flow from the condenser to the evaporator;
- a gas passage linking the evaporator and condenser configured to allow the

- refrigerant to flow from the evaporator to the condenser;
- a wick being included in one of the evaporator, the condenser, the liquid passage or the gas passage;
- the substrate is Si, and the refrigerant is a material including hydrogen;
- the glass and the substrate are bonded by anodic bonding;
- the glass and/or the substrate is covered with a stable material (column 2, lines 34-45; and column 8, lines 11-26);
- the stable material is selected from the group consisting of SiO₂, SiN, SiC and combination thereof; and
- the wick is covered with a stable material (column 5, lines 12-25).

Newton's invention discloses all of the claimed limitations from above except for substantially covering the glass and/or the substrate is covered with a stable material.

3. However, Hayashi teaches a glass and/or the substrate being covered with a stable material ([0111], [0112] and [0114]).

Given the teachings of Hayashi, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the thermally enhanced microcircuit package of Newton with the glass and/or the substrate being covered with a stable material; the stable material is selected from the group consisting of SiO₂, SiN, SiC and combination thereof; and the wick being covered with a stable material.

Doing so would provide a protective barrier and improved thermally stability of the heat-dissipating device.

Response to Arguments

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Applicant's arguments filed August 2, 2005 have been fully considered but they are moot in view of the above-mentioned non-final rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L. Mckinnon whose telephone number is 571-272-4797. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Terrell L Mckinnon
Primary Examiner
Art Unit 3753
October 17, 2005